

**REMARKS**

Claims 1-23 are currently pending in the subject application and are presently under consideration. Claims 9-23 are withdrawn as directed to a non-elected group. Applicant reserves the right to prosecute these claims in a subsequently-filed divisional application. Amendments to the Abstract and specification are shown at pp. 2 and 3 of the Reply. Amended claim 1 is shown on p. 4 of the Reply.

Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

**I. Objection to the Previous Reply**

An objection has been made to the Reply dated June 2, 2006 for identifying an incorrect title of the application. In accordance with the requirement in the subject Office Action, applicant states that the title given in the previous Reply was incorrect and that the title in the subject Reply is the correct title. Therefore, this objection should be withdrawn.

**II. Objection to the Drawings**

An objection has been made to a number of the drawings. Corrected drawings for Figs. 1, 2, and 3 are submitted herewith. The objection to Fig. 8 has been corrected by an amendment to the specification. No new matter is presented. Withdrawal of this objection is respectfully requested.

**III. Objection to the Specification**

An objection has been made to the length of the Abstract of the Disclosure and also to certain paragraphs of the specification. A corrected Abstract is submitted herewith. Therefore, this objection should be withdrawn. The specification has been reviewed in light of the comments made in the Office Action. However, the Office Action only indicates instances of an editorial rather than a substantive nature. It is therefore respectfully submitted that the specification is in fact written in "full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same," in accordance with 35

U.S.C. § 112, first paragraph. It is respectfully requested that either a comprehensive list of specific instances be cited, along with a basis for why these would be unacceptable to a person skilled in the art, or else this objection to the specification be withdrawn.

#### **IV. Rejection of Claim 1 Under 35 U.S.C. §102(b)**

Claim 1 stands rejected under 35 U.S.C. §102(b) as being anticipated by Glendinning (US 4,816,361). This rejection should be withdrawn for the following reasons. Glendinning does not disclose or suggest each and every limitation set forth in the subject claims.

A single prior art reference anticipates a patent claim only if it *expressly or inherently describes each and every limitation set forth in the patent claim*. *Trintec Industries, Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 63 USPQ2d 1597 (Fed. Cir. 2002); *See Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The *identical invention must be shown in as complete detail as is contained in the ... claim*. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) (emphasis added).

Applicant's claimed invention relates to *a mask for a nanoprint lithographic process*. In particular, claim 1 recites a *translucent substrate with one or more three-dimensional features comprising one or more vertical sidewalls*. An *absorbing material is deposited upon one or more of the vertical sidewalls so that light in an incident direction to an upper surface of the substrate will be absorbed by the absorbing material, resulting in light blocking features*. One or more horizontal surfaces are *formed upon one or more of the three-dimensional features that allow light rays to exit a lower surface of the substrate unobstructed by the absorbing material*. Glendinning does not disclose or suggest these novel aspects of the invention as claimed.

Glendinning relates to a method of patterning a mask. Contrary to assertions in the Office Action, the cited document does not disclose the claimed aspects at the cited reference numerals, let alone anywhere else in the document. Rather, the cited reference numerals states that a deposited chromium layer is evaporated, resulting in "ridges with a double bump on top (see Fig. 5)" (col. 4, lines 54-56), for the purpose of obtaining

peripherally defined pattern boundaries on a mask plate. The reference fails to disclose or suggest *absorbing material deposited upon one or more of the vertical sidewalls so that light in an incident direction to an upper surface of the substrate will be absorbed by the absorbing material, resulting in light blocking features*, as recited in amended claim 1.

1. In view of at least the foregoing arguments, it is readily apparent that the cited document does not disclose or suggest every aspect of the claimed subject matter.

Accordingly, the rejection of independent claim 1 (and claims that depend there from) should be withdrawn.

#### **V. Rejection of Claims 2-3 Under 35 U.S.C. §102(b)**

Claims 2-3 stand rejected under 35 U.S.C. §102(b) as being anticipated by Glendinning in view of Grant *et al.* (Grant and Hackh's Chemical Dictionary, Fifth Edition, 1987). Withdrawal of this rejection is requested for at least the following reasons. It is improper to combine references in a rejection under 35 U.S.C. §102(b). A corrected Office Action is required with properly-stated grounds for rejection. Further, claims 2-3 depend from independent claim 1. As stated *supra*, Glendinning does not disclose or suggest every limitation set forth in the subject independent claim. Even if the rejection were proper, Grant *et al.* does not cure the aforementioned deficiencies of the primary reference. Withdrawal of this rejection is therefore respectfully requested.

#### **VI. Rejection of Claims 1 and 3 Under 35 U.S.C. §102(b)**

Claims 1 and 3 stand rejected under 35 U.S.C. §102(b) as being clearly anticipated by Vasudev *et al.* (WO 94/17450) or Vasudev *et al.* (US 5,411,824). This rejection should be withdrawn for the following reasons. Vasudev *et al.* does not disclose or suggest each and every limitation set forth in the subject claims.

The two Vasudev *et al.* documents are counterpart documents relating to the same subject matter and will henceforth be discussed together. Vasudev *et al.* relates to a phase shifting mask having absorbent sidewalls that reduce edge scattering and thereby improve resolution. Contrary to assertions in the Office Action, the cited document does not disclose the claimed aspects at col. 3, lines 36-41 or col. 4, lines 13-26, let alone anywhere else in the document. Rather, the first cited portion simply characterizes the

phase differences and resulting problems that occur in a prior art phase shifting mask from scattering within the interior of vertical trenches in the mask. The second cited portion simply discloses “what actually happens to light rays 25-28 which impact the sidewall 31. Instead of scattering due to the edge effects of the sidewall, these rays are substantially absorbed by the absorbing sidewall... (which) altogether prevents or reduces the scattering problem....” Vasudev *et al.* is only concerned with preventing internal scattering of light within a phase mask. The cited document therefore fails to disclose or suggest a mask having *an absorbing material deposited upon one or more of the vertical sidewalls so that light in an incident direction to an upper surface of the substrate will be absorbed by the absorbing material, resulting in light blocking features and one or more horizontal surfaces, formed upon one or more of the three-dimensional features, that allow light rays to exit a lower surface of the substrate unobstructed by the absorbing material*, as recited in amended claim 1. For at least the foregoing reasons, it is readily apparent that the cited document does not disclose or suggest every aspect of the claimed subject matter. Accordingly, the rejection of independent claim 1 (and claims that depend there from) should be withdrawn.

#### **VII. Rejection of Claim 2 Under 35 U.S.C. §102(b)**

Claim 2 stands rejected under 35 U.S.C. §102(b) as being anticipated by either of the Vasudev *et al.* documents in view of Grant *et al.* Withdrawal of this rejection is requested for at least the following reasons. As above, it is improper to combine references in a rejection under 35 U.S.C. §102(b). A corrected Office Action is required that properly states the grounds for rejection. Further, claim 2 depends from independent claim 1. As stated *supra*, neither of the Vasudev *et al.* references disclose or suggest every limitation set forth in the subject independent claim. Even if the rejection were proper, Grant *et al.* does not cure the aforementioned deficiencies of the primary reference. Therefore, this rejection should be withdrawn.

#### **VIII. Rejection of Claims 4 and 8 Under 35 U.S.C. §103(a)**

Claims 4 and 8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Glendinning or either of the Vasudev *et al.* documents in view of Hashimoto (US

5,786,114). Withdrawal of this rejection is requested for at least the following reasons. As stated *supra*, neither Glendinning nor either of the Vasudev *et al.* documents disclose or suggest every limitation set forth in the subject independent claim 1. Therefore, claims 4 and 8, which depend therefrom, is allowable for at least the same reasons. Withdrawal of this rejection is therefore respectfully requested.

#### **IX. Rejection of Claim 5 Under 35 U.S.C. §103(a)**

Claim 5 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Glendinning or either of the Vasudev *et al.* documents in view of Takemura (US 5,530,265) or French *et al.* (US 2006/0051974). Withdrawal of this rejection is requested for at least the following reasons. Claim 5 depends from independent claim 1. As stated above, Glendinning and the Vasudev *et al.* documents fail to disclose or suggest every limitation set forth in the subject independent claim. Neither Takemura nor French *et al.* cure the aforementioned deficiencies of these base references. Therefore, this rejection should be withdrawn.

#### **X. Rejection of Claim 6 Under 35 U.S.C. §103(a)**

Claim 6 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Glendinning or either of the Vasudev *et al.* documents in view of Aggas *et al.* (US 5,944,157) or Aggas *et al.* (US 6,020,590). Withdrawal of this rejection is requested for at least the following reasons. Claim 6 depends from independent claim 1, and as noted *supra*, Glendinning and the Vasudev *et al.* documents do not disclose or suggest every limitation set forth in the subject independent claim. Neither of the Aggas *et al.* documents make up for the deficiencies of the cited reference. For at least these reasons, this rejection should be withdrawn.

#### **XI. Rejection of Claim 7 Under 35 U.S.C. §103(a)**

Claim 7 stands rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of Glendinning or either of the Vasudev *et al.* documents in view of Yeh (US 2003/0193068). Withdrawal of this rejection is requested for at least the following reasons. Claim 7 depends from independent claim 1. Glendinning and the Vasudev *et al.*

documents fail to disclose or suggest every limitation set forth in the subject independent claim, as stated *supra*. Yeh fails to cure the aforementioned deficiencies; thus, this rejection should be withdrawn.

**CONCLUSION**

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [AMDP999US].

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number below.

Respectfully submitted,  
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